Draft

CCOS Emission Inventory Preparation Plan

#	PROJECT	Agency	1999 Jul-Sep	1999 Oct-Dec	2000 Jan-Mar	2000 Apr-Jun	2000 Jul-Sep	2000 Oct-Dec	2001 Jan-Mar	2001 Apr-Jun	2001 Jul-Sep	2001 Oct-Dec
I	**1999 BASELINE ANNUAL AVERAGE EMISSION INVENTORY DEVELOPMENT**											
Ia	**STATIONARY SOURCES - POINT**											
	Develop inventory preparation schedule	A		→								
	Review permit applications and verify compliance and inspection records	D		→	→	→	→					
	Decide which point sources will be updated based on criteria including the amount and type of emissions from the facility, large changes from previous years, facility closures and addition of new facilities	D		→								
	Send annual questionnaires/surveys /reports to facilities	D			→	→						
	Gather information needed to calculate emissions including process rates, source test data if available, emission factors, and control equipment	D			→	→	→	→				
	Incorporate findings from ARB, industry or local research contracts into inventory development	A, D					→	→				
	Identify point source processes that should be updated/revised and determine appropriate methodologies	D				→	→	→				
	Perform QA/QC activities (see IIIa)	D				→	→	→				
	Update/Revise point source data	D					→	→	→			
	Submit point source data to ARB	D						→	→			
Ib	**STATIONARY SOURCES - AREA**											
	Develop inventory preparation schedule	A		→								
	Decide which area sources will be updated based on criteria including the amount and type of emissions from each category, large changes from previous years, and application of controls	A, D		→	→							
	Gather information needed to calculate emissions including process rates, emission factors, and control equipment	A, D			→	→	→	→				
	Incorporate findings from ARB, industry or local research contracts into inventory development	A, D					→	→				
	Identify categories that should be updated/revised and determine appropriate methodologies	A, D				→	→	→				
	Perform QA/QC activities (see IIIb)	D				→	→	→				

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I	**1999 BASELINE ANNUAL AVERAGE EMISSION INVENTORY DEVELOPMENT (Continued)**												
	Update/Revise area source data	D					→	→	→				
	Submit updated total unreconciled emissions to ARB for district and ARB categories	A, D						→	→				
	Update total unreconciled emissions into CEIDARS	A							→				
	--point source emissions updated												
	--total unreconciled area source emissions updated												
	--area source emissions are calculated by subtracting point source emissions from total unreconciled area source emissions												
Ic	**FINALIZE AND DISTRIBUTE BASELINE INVENTORY**												
	Distribute the draft inventory and solicit comments from EICG participants	A, D									→	→	→
	Make changes based on comments and recommendations and finalize the inventory	A, D											→

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II	**CONDUCT QA/QC ACTIVITIES**												
IIa	**DEVELOP QA/QC PLAN**												
	Develop draft emission inventory preparation plan	A	**C**										
	Collect district's QA procedures	A			→								
	Document ARB's QA procedures	A	**C**										
	Set data quality objectives	A, D			→								
	Identify areas in need of improvement based on EIIP	A, D			→	→							
	Identify problem areas from previous studies	A, D			→	→							
	Identify differences between districts	A, D			→	→							
	Identify ARB role and district roles	A, D			→	→							
	Draft outline of QA plans	A			→	→							
	Develop ARB audit/review process for district data	A			→	→							
IIb	**STATIONARY SOURCES - POINT**												
	Check the facility UTM data and assign UTM coordinates to facilities without them	D			→	→	→						
	Review facility UTM coordinates for accuracy	D	**C**[J]		→	→	→						
	Review stack data and stack UTMs	D			→	→	→						
	Verify SCC and SIC assignments	D			→	→	→						
	Review temporal data for completeness and accuracy (for example, monthly throughputs)	D			→	→	→						
	Ensure all the items from the QA plan are incorporated/implemented	A, D					→	→	→				
	QA the device and process information provided by each facility for reasonableness	D					→	→	→				
	QA emission calculation methodology	D, F					→	→	→				
	Quantify variability of all emissions estimates	D					→	→	→				
	Conduct visual checks, cross-check vital data, similar types of grouping	A, D					→	→	→				
	Engineering audit (for facilities failing QA/QC criteria)-verify supporting documentation, i.e. source tests, MSDS; verify district's databases; verify annual emission reports	D					→	→	→				
	Identify questionable emissions and reconcile errors	D					→	→	→				
	Review district data and conduct internal CEIDARS QA checks	A					→	→	→				
	Conduct a reality check by comparing with previous inventory	A, D					→	→	→				

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II	**CONDUCT QA/QC ACTIVITIES (Continued)**												
	Determine if data quality objectives are met	A, D					→	→	→				
	Compare the 1999 inventory to previous modeling inventories	A, D								→			
	Compare 1999 gridded emissions vs. 1999 annual average emissions on selected categories	A								→			
IIc	**STATIONARY SOURCES - AREA**												
	Review temporal data for completeness and accuracy	A, D				→	→						
	Ensure all the items from the QA plan are incorporated/implemented	A, D						→	→				
	Check if appropriate surrogates were used to spatially allocate emissions	D						→	→				
	Ensure consistency between districts in calculating fugitive emissions	A						→	→				
	QA emission calculation methodology	A, D, F						→	→				
	Identify questionable emissions and reconcile errors	A, D						→	→				
	Conduct visual checks, cross-check vital data, similar types of grouping	A, D						→	→				
	Conduct a reality check by comparing with previous inventory and corresponding point sources	A, D						→	→				
	Review data and conduct internal CEIDARS QA checks	A						→	→				
	Compare 1999 gridded emissions vs. 1999 annual average emissions on selected categories	A							→	→			
IId	**MOBILE SOURCES - ON-ROAD**												
	Compare 1999 gridded emissions vs. 1999 summer seasonal emissions on selected categories	A							→	→			
	Validate the transportation model	C	??										
IIe	**MOBILE SOURCES - NON-ROAD**												
	Review OFFROAD model for reasonableness	A, D			→	→	→	→					

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III	**DAY-SPECIFIC DATA COLLECTION**												
IIIa	**STATIONARY SOURCES - POINT**												
	Collect day-specific daily/hourly data for identified large point sources	D					→	→	→				
	Collect CEMS data for identified large point sources	D					→	→	→				
	Collect information on unusual events, breakdowns, variances, and temporary shutdowns for identified large point sources	D					→	→	→				
IIIb	**STATIONARY SOURCES - AREA**												
	Collect day-specific daily/hourly data for wildland fires/forest fires	A,CDF, BLM, BIA, NPS, USFS					→	→	→				
	Collect day-specific daily/hourly data for agricultural and prescribed burns	D					→	→	→				
IIIc	**MOBILE SOURCES - ON-ROAD**												
	Obtain hourly and daily traffic count data for freeways	CT,UCD					→	→	→				
???	Obtain daily average traffic count data (for surface streets)	C??											
???	Obtain heavy-duty truck traffic count data	C??											
IIId	**MOBILE SOURCES - NON-ROAD**												
	???												

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IV	**2000 BASELINE MODELING INVENTORY DEVELOPMENT**												
IVa	**STATIONARY SOURCES - POINT**												
	SHORT-TERM												
	1. Create and review snapshot of most current growth and control factors	A,D							→				
	2. Grid 1999 point source emissions and project to 2000 using growth and control factors	A								→	→		
	LONG-TERM												
	1. Grid point source emissions from 2000 annual average inventory	A,D										→	
	2. Update the 2000 gridded inventory with day-specific 2000 emission data from large point sources	A,D	2002										
IVb	**STATIONARY SOURCES - AREA**												
	SHORT-TERM												
	1. Create and review snapshot of most current growth and control factors	A,D							→				
	2. Grid 1999 area source emissions and project to 2000 using growth and control factors	A								→	→		
	LONG-TERM												
	1. Grid area source emissions from 2000 annual average inventory	A,D										→	
	2. Update the 2000 gridded inventory with day-specific 2000 emission data from wildfires, agricultural and prescribed burns	A,D	2002										

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IV	**2000 BASELINE MODELING INVENTORY DEVELOPMENT (Continued)**												
IVc	**MOBILE SOURCES - ON-ROAD**												
	SHORT-TERM												
???	Run DTIM3 using EMFAC99	ALP											
	LONG-TERM												
	Create adjustment factors for freeway traffic count data	UCD	?										
	Check with each COG on schedule for transportation plan updates	ALP	?										
	Obtain inputs from COG and provide ARB with the inputs	ALP	?										
???	Develop inventory of heavy-duty diesel trucks	??											
	Run DTIM3 using EMFAC99	ALP											
IVd	**MOBILE SOURCES - NON-ROAD**												
	SHORT-TERM												
	1. Create and review snapshot of most current growth and control factors	A,D							→				
	2. Grid 1999 area source emissions and project to 2000 using growth and control factors	A								→	→		
	LONG-TERM												
	1. Grid area source emissions from 2000 annual average inventory	A,D										→	
	2. Update the 2000 gridded inventory with day-specific 2000 emission data from wildfires, agricultural and prescribed burns	A,D	2002										

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IV	**2000 BASELINE MODELING INVENTORY DEVELOPMENT (Continued)**												
IVe	**ALL OF THE ABOVE (STATIONARY AND MOBILE) SOURCES**												
	Compare 1999 gridded emissions vs. 1999 annual average emissions on selected categories	A									→		
	Compare 2000 gridded emissions vs. 2000 annual average emissions on selected categories	A	2002										
IVf	**BIOGENIC SOURCES**												
	Evaluate previous biogenic inventories for domain	A				→	→	→					
	Evaluate available vegetation distribution databases	A				→	→	→					
	Evaluate available land use data	A				→	→	→					
	Standardize vegetation and land use designations among data bases	A					→	→					
	Assemble biogenic and land use data on GIS platform	A					→	→					
	Conduct ground surveys to validate plant species distributions	COOP				→	→	→	→				
	Acquire 30 meter resolution satellite imagery from which LAI (Leaf Area Index) can be calculated	A?				→	→	→					
	Perform ground-based surveys to validate LAI developed from statellite imagery	COOP				→	→	→					
	Review existing literature and develop a database of leaf mass density values for the most important vegetation species	A				→	→	→					
	Perform field studies to experimentally determine leaf mass density values for those commonly occurring species for which leaf mass density values have not yet been measured	COOP?				→	→	→					
	Compile a database of VOC emission rates	A				→	→	→					
	Assign emission rates using a taxonomic method for those species for which emission rate measurements are not available.	A				→	→	→					
	Use GIS to develop domain-wide gridded green leaf mass inventory	A							→	→	→		
	Apply biogenic model to generate domain-wide speciated gridded biogenic emission inventory	A								→	→		

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V	**INTEGRATION OF DAY-SPECIFIC INFORMATION**												
Va	**STATIONARY SOURCES - POINT**												
	Choose ~15 intensive days for data collection	TC								→			
	Compile emission and stack data for intensive days plus 1 day before intensive days	D									→		
	Choose episode days to model	TC									→		
	Convert and submit day-specific emission and stack data to ARB in MEDS records and stack format	D										→	
	Integrate day-specific inventory data	A	2002										
Vb	**STATIONARY SOURCES - AREA**												
	Choose ~15 intensive days for data collection	TC								→			
	Compile wildland/forest fires data for intensive days plus 1 day before intensive days	A									→		
	Compile agricultural and prescribed burn fires data for intensive days plus 1 day before intensive days	D									→		
	Choose episode days to model	TC									→		
	Convert day-specific wildland/forest fires data in MEDS records	A										→	
	Convert day-specific agricultural and prescribed burn fires data in MEDS records	D										→	
	Integrate day-specific inventory data	A	2002										
Vc	**MOBILE SOURCES - ON-ROAD**												
	Choose ~15 intensive days for data collection	TC								→			
	Compile freeway traffic count data, average daily street traffic data ??, and heavy-duty vehicle traffic data ?? for intensive days plus 1 day before intensive days	UCD									→		
	Choose episode days to model	TC									→		
	Develop travel adjustment factors for (freeways)traffic count collected data	UCD							→	→	→	→	→

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V	**INTEGRATION OF DAY-SPECIFIC INFORMATION (Continued)**												
???	Develop travel adjustment factors for (surface streets) from average daily traffic data	C											
???	Develop inventory of heavy vehicles	C											
	Submit day-specific data in MEDS records	ALP										→	
	Integrate day-specific inventory data	A	2002										
Vd	**MOBILE SOURCES - NON-ROAD**												
	???												

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VI	**RESEARCH CONTRACTS**												
	1) Solvent Cleaning/Degreasing Source Category Emission Inventory	A, C	**C**										
	2) Industrial Surface Coating-Wood Furniture and Fixtures Emission Inventory	A, C	**C**										
	3) Improvement of Speciation Profiles for Architectural and Industrial Coating Operations	A, C	**C**										
	4) Improvement of Speciation Profiles for Aerosol Coating	A, C		→	→								
	5) Emission Forecasting System Redesign	A, C		→	→								
	6) Recreational Boating Activity Trends	A, C	**C**										
	7) Marine Vessel Emission Inventory & Control Strategies	C	**C**										
	8) CCOS Domain Traffic Count Scoping Study	UCD		→	→								
	9) Collection and Analysis of Day-Specific Traffic Count Information for the CCOS Modeling Domain	UCD			→	→	→	→	→	→	→		
	10) Integration of Transportation Data for CCOS Domain and Run DTIM for Entire Modeling Domain	ALP			→	→	→	→	→	→	→	→	→
	11) Develop Baseyear and Future Year Gridding Surrogates for Spatial Distribution of Area and Off-Road Mobile Source Emission Categories	C				→	→	→	→	→	→		
	12) Emission Inventory Validation Studies Using On-Road Vehicle Remote Sensing	C				→	→	→	→	→	→		
	13) Development of VOC Speciation Profiles	C				→	→	→	→	→	→		
	14) Development & Validation of Databases for Modeling Biogenic Hydrocarbon Emissions in California Airsheds	UCLA		→	→	→	→	→	→	→	→	→	→
	15) Leaf Area Index (LAI) Derived from Satellite Spectral Observation		**C**										
	16) Whole Ecosystem Measurements of Biogenic Hydrocarbon Emissions	UCB	**?**										
	17) Leaf Mass & Vegetation Species Validation Field Study for San Joaquin Valley	COOP	**?**										
	18) Development of a Gas and Particulate Matter Organic Speciation Profile Database	C			→	→	→	→	→	→	→	→	→
	19) Development of Emissions Activity Data in Support of CRPAQS Annual and Episocid Field Studies	C			→	→	→	→	→	→	→	→	→

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VII	**COMPUTER PLATFORM**												
	Agree on the format for data transfer	A, D	**C**										
	CEFS for forecasting the baseline inventory??	A											
VIII	**FUTURE YEAR GRIDDING EMISSION INVENTORY**												
IX	**FOOTNOTES**												
	A= ARB, D=District, STI=Sonoma Technology Inc., UCD=UC Davis, ALP=Alpine Geophysics, F=Facility, CT=Caltrans, C=Contractor, COG=Council of Government, TC=CCOS Technical Committee, UCLA=University of California at Los Angeles, UCB=University of California at Berkeley, COOP=University of California Cooperative Extension, EICG=Emission Inventory Coordination Group, EIIP=Emission Inventory Improvement Program												
	CDF=California Department of Forestry, USFS=United States Forest Service, NPS=National Park Service, BIA=Bureau of Indian Affairs, BLM=Bureau of Land Management, CEFS=California Emission Forecasting System												
	C=Task Completed () = Proposed Responsible Agency												
	C^{S} = Task completed by Sacramento Metro AQMD												
	C^{J} = Task completed by San Joaquin Valley Unified APCD												
	C^{B} = Task completed by Bay Area AQMD												
	C^{A}= Task completed by ARB												